

A New Species of *Macoubea* (Apocynaceae) from Mesoamerica

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ABSTRACT. A new species of *Macoubea* from Costa Rica and Panama is described and illustrated. Its relationships with the two South American species of the genus are discussed.

Macoubea has been considered to comprise just two primarily South American species, *M. guianensis* and *M. sprucei* (Allorge, 1985), with some specific varieties. Nevertheless, recent work on the Apocynaceae for "The Manual to the Plants of Costa Rica" and the *Flora Mesoamericana* demonstrate the existence of a third species, endemic to Mesoamerica, which is described here.

Macoubea mesoamericana J. F. Morales, sp. nov.

TYPE: Costa Rica. Limón: Cantón de Talamanca, Amubri, camino lastreado al SO del pueblo, 24 June 1989, *Hammel et al.* 17516 (holotype, INB; isotypes, CR, F, MO, NY).

[Specimens have been distributed as *Macoubea sprucei* (Müller Argoviensis) Markgraf.]

Arbor parva. Folia elliptica, 12–19(–21.5) × 5–12.5 (–14) cm, glabra, subcoriacea. Inflorescentiae terminales, sepala 1.5–2 mm, corollae tubo 3–5 mm, lobis 7–9 × 4 mm. Fructus 4.5–7 × 2.8–3.6 cm, seminibus 1.3–1.5 × 0.4–0.5 cm.

Trees 10–50 m high; branchlets terete to subterete, glabrous to glabrate. Leaves petiolate; petiole glabrous, 1–3 cm long; blade 12–19(–21.5) × 5–12.5(–14) cm, firmly membranaceous to subcoriaceous, broadly elliptic; acuminate to acute at the apex, cuneate basally; glabrous on both sides; secondary veins brochidodromous; veinlets conspicuously reticulated. Inflorescence corymbose, many-flowered, agglomerate, terminal, rarely subterminal, glabrous to glabrate; peduncle 0.8–3.4 cm long; pedicels 0.2–0.6 cm long; bracts ovate, ca. 1 mm long, fimbriate, conspicuous. Flowers greenish yellow, yellowish to white; sepals broadly ovate, 1.5–2 mm, obtuse to rounded, imbricate, glabrous to glabrate, marginally ciliate, bearing many colleters inside; corolla salverform, tube 3–5 mm long, ca. 2 mm wide, sparsely puberulent to glabrate without; lobes obliquely obovate to narrowly obovate, 7–9 × 4 mm, spreading to somewhat reflexed; stamens inserted near the base of the corolla tube; filaments

sparsely puberulent; anthers narrowly oblong, 4–4.5 mm, glabrous, acuminate, sagittate at the base; ovary ca. 2 mm, puberulent, 2-carpellate; pistil head ca. 1 mm. Fruits 4.5–7 × 2.8–3.6 cm, hemisyncarpous, moderately to obscurely bilobed, the locules rounded; seeds 1.3–1.5 × 0.4–0.5 cm, oblong, finely rugose, minutely pitted and naked.

Macoubea mesoamericana is known only from southeastern Costa Rica, on the Atlantic slopes of the Cordillera de Talamanca, and Panama, near El Llano–Cartí road, at 200–500 m. Flowering September–March. Fruiting November–April.

Although this species was previously considered

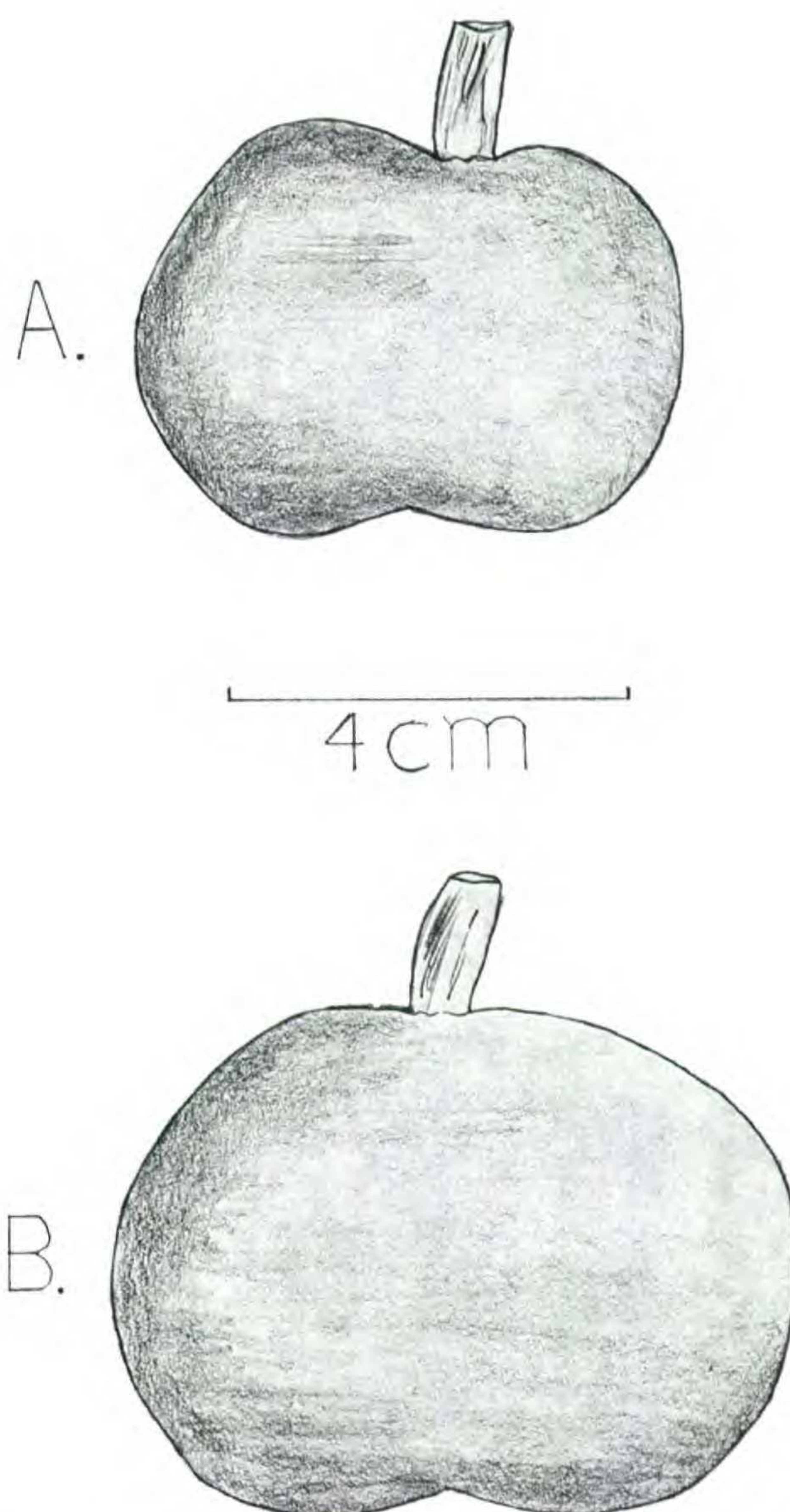


Figure 1. Fruits of *Macoubea mesoamericana* J. F. Morales. —A. Herrera 3343. —B. Chacón 185.

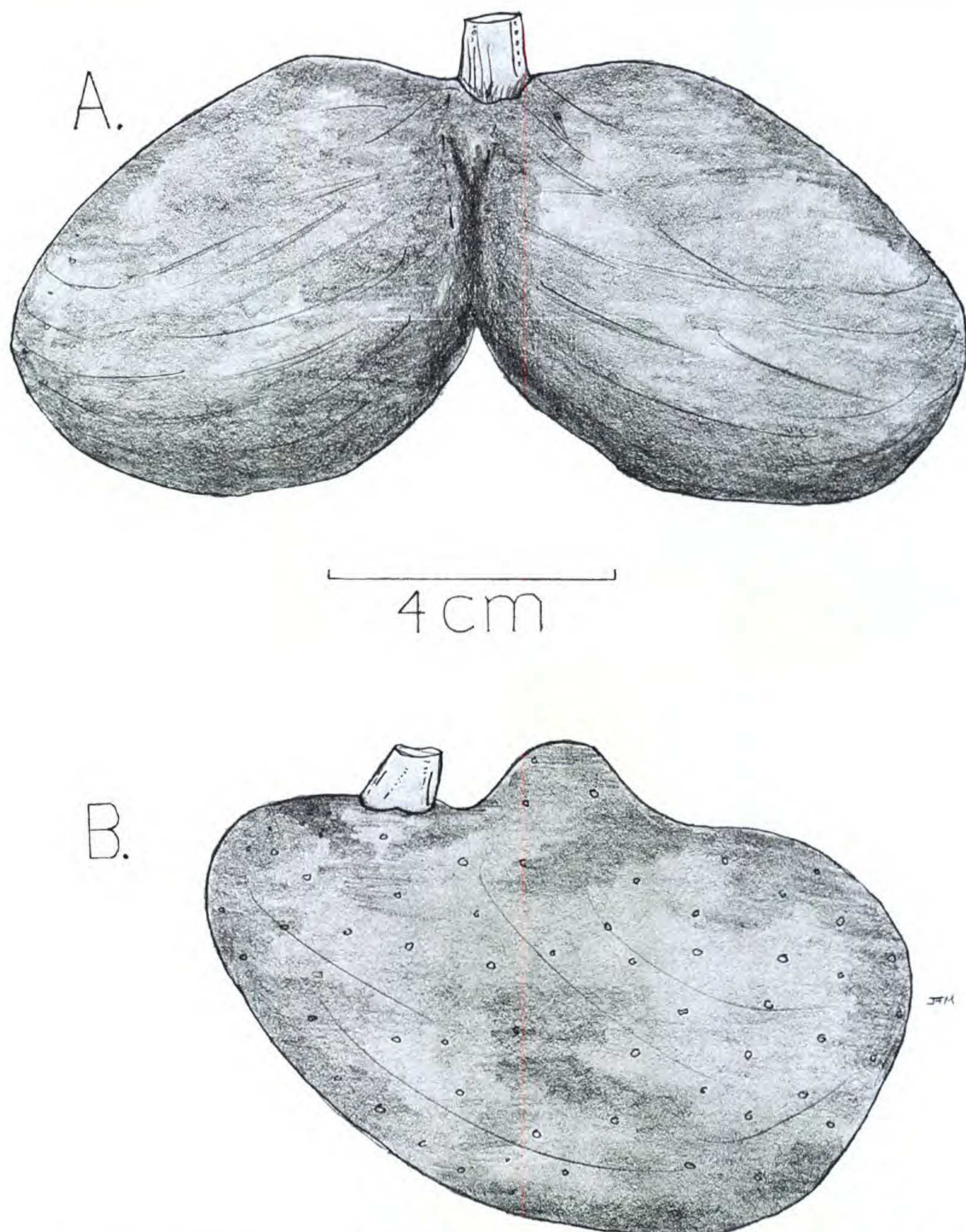


Figure 2. Fruits of *Macoubea sprucei* (Müller Argoviensis) Markgraf. —A. Revilla 3747. —B. Schultes 26072.

as *Macoubea sprucei* (Allorge, 1985; Gentry, 1974), there are great differences between the two species. In the treatment of Allorge (1985), plate 76 of *M. sprucei* based on the Panamanian specimens represents *M. mesoamericana*. An explanation is in order.

The fruits of *Macoubea mesoamericana* are always hemisyncarpous, moderately to obscurely bilobed (Fig. 1). In *M. sprucei* (Fig. 2) the fruits are reniform and formed by two fused carpels, despite the fact that the fruits are sometimes reduced to only one locule by abortion (e.g., the type of *M. witotorum*, a synonym of *M. sprucei*). Of the approximately 40 fruiting collections examined from South America none had fruits like those of the Mesoamerican collections. In addition, the fruits of *M. mesoamericana* are always conspicuously shorter than *M. sprucei*.

Another difference is found in the seed texture

(Fig. 3). In *Macoubea mesoamericana* the seeds are minutely and finely rugose, inconspicuously and minutely pitted, features consistent in all the collections available. The seeds of *M. sprucei* and *M. guianensis* are coarsely rugose, but with conspicuous and irregular depressions along the testa. In addition, *Macoubea sprucei* and *M. guianensis* are restricted to Amazonia, while *M. mesoamericana* is known only from Costa Rica and Panama. The three species have similar flowers and leaves; sometimes it may be difficult to separate *Macoubea sprucei* from *M. guianensis*. Also the texture and pubescence of the leaves are highly variable (Monachino, 1945). Many species and intraspecific varieties were recognized previously by Monachino (1945) and Allorge (1985). However, the recognition of varieties based only on these characters seems unwarranted.

Paratypes. COSTA RICA. **Limón:** Talamanca, Bratsi,

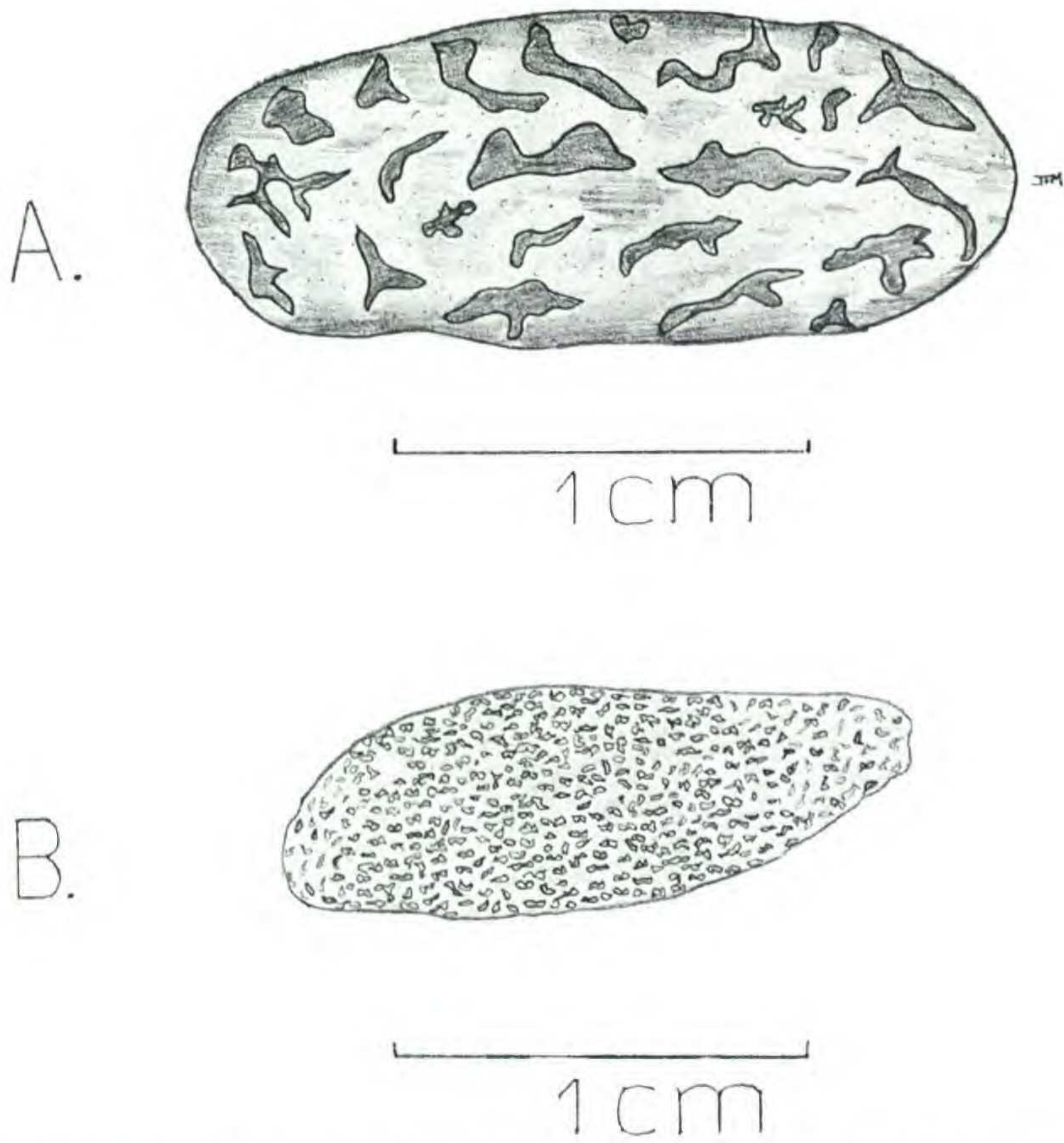


Figure 3. Seeds of *Macoubea*. —A. *M. sprucei* (Müller Argoviensis) Markgraf (Revilla 3747). —B. *M. mesoamericana* J. F. Morales (Chacón 185).

Alto Lari, Aguilar *et al.* 938 (INB, MO); Parque Internacional La Amistad, Croriña, Chacón 185 (INB, MO); Bratsi, Talamanca, Herrera 3343 (COL, CR, F, INB, MO, NY, USJ). PANAMA. **Panamá:** along El Llano–Cartí road, Correa *et al.* 1847 (DUKE, MO, PMA), de Nevers *et al.* 4845 (MO), de Nevers *et al.* 6219 (MO), Gentry *et al.* 14198 (MO), Kennedy 2411 (MO), Kennedy 2518 (MO), Liesner 1145a (MO), McPherson *et al.* 8201 (MO), McPherson *et al.* 8216 (MO), Mori *et al.* 5106 (MO). **San Blas:** El Llano–Cartí road, Herrera *et al.* 1046 (MO), de Nevers *et al.* 4347 (MO), de Nevers *et al.* 5005 (MO), de Nevers *et al.* 6193 (MO).

KEY TO THE SPECIES OF *MACOUBEA*

- 1a. Corolla lobes 1.1–1.6 cm long; fruits 1-carpellate by abortion, globose, subglobose, or subspherical *M. guianensis* Aublet
- 1b. Corolla lobes 0.7–1 cm long; fruits hemisyncarpous, composed by two locules fused basally, locules somewhat rounded to reniform, sometimes reduced to only one locule by abortion but never subspherical or globose.
 - 2a. Fruits 9–13 × 6–7.5 cm; seeds coarsely ru-

- gose, with conspicuous and irregular depressions along the testa; Amazonia *M. sprucei* (Müller Argoviensis) Markgraf
- 2b. Fruits 4.5–6(–7) × 2.8–3.6 cm; seeds minutely and finely rugose, inconspicuously and minutely pitted; Costa Rica and Panama *M. mesoamericana* J. F. Morales

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